

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

STUDIES IN THE TYRANNIDÆ.

I. A REVISION OF THE GENUS *PIPROMORPHA*.

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In arranging the series of *Pipromorpha* in the collection of the Carnegie Museum a few years ago the writer noticed certain suspicious-looking differences exhibited by specimens from Bolivia. It was found that the examples from this country fell into two series, in one of which the wings were perfectly plain, while in the other the inner secondaries were conspicuously edged terminally with yellowish or buffy, and the middle and greater wing-coverts tipped with the same color, forming two bands across the wing. These differences were correlated with others less noticeable, but apparently constant. Dr. Harry C. Oberholser, to whom some of these specimens were submitted, opined that the differences in question were due to age, but when confronted with further evidence in the shape of additional material, showing that the characters held for young birds as well as adults, he saw fit to revise his opinion. Meanwhile good series of *Pipromorpha* from French Guiana and the lower Amazon had come to hand, in which precisely the same differences were observable. The question at once arose as to which of these two forms Lichtenstein's name *Muscicapa oleaginea* applied—a question which through the kindness of Dr. Ernst Hartert, who examined the type-specimen in the Berlin Museum, we have been able to definitely settle. While this investigation was in progress a paper by Mr. Charles Chubb appeared, in which he described and named no less than six races of *Pipromorpha oleaginea*, but apparently without recognizing the significance of the characters to which we have called attention. In order to clear up the resultant confusion a revision of the entire generic group

thus became imperative, and the results of the study are presented herewith. In undertaking it we have examined no less than four hundred and sixty specimens, of which one hundred and eighty-three are in the collection of the Carnegie Museum. The remainder were loaned for the purpose by the authorities of the following institutions: the United States National Museum, the American Museum of Natural History, the Museum of the Brooklyn Institute, the Academy of Natural Sciences of Philadelphia, the Museum of Comparative Zoology, the Gœldi Museum of Pará, Brazil, the Museum Paulista of São Paulo, Brazil, and the National Museum of Buenos Aires, Argentina. To the several parties in charge of the collections in these museums the writer takes this opportunity of again returning his thanks for their uniform courtesy. His acknowledgments are also due to Dr. Ernst Hartert, not only for examining Lichtenstein's type-specimen in Berlin, but also for furnishing certain data on specimens in the Tring Museum. As in other systematic papers by the present writer, all references have been personally verified. Measurements are in millimeters, that for the bill being of the exposed culmen, and unless otherwise stated are based on a series of ten specimens of each sex. The names of colors correspond as a rule to those in Mr. Ridgway's "Color Standards and Color Nomenclature."

GENUS *Pipromorpha* GRAY.

Pipromorpha BONAPARTE, Ann. Sci. Nat., Zool., (4), I, 1854, 134 (ex Schiff, MS.; no type or included species designated!).—GRAY, Cat. Gen. and Subgen. Birds, 1855, 146 (*Muscicapa oleaginea* Lichtenstein designated as type).—CABANIS and HEINE, Mus. Heineanum, II, 1859, 55 (ref. orig. publ.; list of species).—GRAY, Hand-List Birds, I, 1869, 355 (list of species).—GIEBEL, Thes. Orn., III, 1877, 203 (list of species).—WATERHOUSE, Ind. Gen. Avium, 1889, 173 (ref. orig. publ.).—RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 345, 452 (diag.; key to forms).

The earliest known species of the group was *Muscicapa oleaginea*, described by Lichtenstein in 1823. A second species, *Mionectes rufiventris*, was described from southern Brazil by Cabanis in 1845, and associated with the other. In 1854 Bonaparte made use of the term *Pipromorpha* in a nominal list of genera, but without any diagnosis or indication of the type or included species. *Pipromorpha* is thus a *nomen nudum* at this place, and must date from G. R. Gray, 1855, who designated its type as *Muscicapa oleaginea* Lichtenstein. By most authors, however, it was merged with *Mionectes*, until the appearance of the fourth part of Mr. Ridgway's

great work on 'The Birds of North and Middle America' in 1907 led to its more general recognition. This author assigned to it four species, but one of these is almost certainly a synonym. In the present review we recognize four species, including eleven subspecies, two of which are described as new.

The species of this group agree in having a small, slender bill, a little wider than high at the base, with weak rectal bristles, and oval nostrils, with an inner shelf or flap apparent. The culmen is prominently ridged, and the tip distinctly decurved. The wings are rather long for this family, with the wing-tip about equalling the exposed culmen. The seventh, eighth, and ninth primaries are longest, and the outer primaries in many individuals are more or less narrowed terminally, or even distinctly emarginate (but never "scooped" as in *Mionectes*), the precise character and extent of this modification varying greatly. The tail is even, and approximately three-fourths the length of the wing. The feet are weak, but the claw of the hind toe is relatively prominent. The pattern of coloration is olive green above and deep buffy or ochraceous below, the head all around being gray in one species.

So far as we can discover there is only one character of value by which to distinguish *Pipromorpha* from *Mionectes*, namely, the different shape of the ninth primary. Mr. Ridgway says that in *Pipromorpha* this feather is "normal," but as a matter of fact three or four of the outer primaries are so often narrowed or sharply emarginated terminally that it is very misleading to describe it in this way. Probably the individuals showing these peculiarities are older birds, but at any rate sex has certainly nothing to do with the matter. Whether under the circumstances *Pipromorpha* should still be kept separate from *Mionectes* is a question which we need not discuss at present.

Pipromorpha is a group characteristic of the forest region in the Tropical Zone, and enjoys an extensive range in the American Tropics, from southern Brazil and northern Argentina north to eastern Mexico, a distinct species having been developed at either extremity of this range. It is remarkable for including two other species, perfectly distinct, but yet so closely related that up to the present they have passed for one form, living side by side throughout an immense area in Bolivia, Brazil, and Guiana. When more is known about the life-histories of these two forms we may find that they occupy different habitats, but the problem of their origin and present distribution is not easy to solve. Apparent gaps in the range of the group as for instance that existing in northern Venezuela, open up other interesting questions. Seasonal and individual variation is considerable, and introduces complications into any attempt to discriminate the races into which the several species (with one exception) seem to divide. In the key which follows we endeavor to arrange the various forms into what seems to be the most natural and orderly sequence. The color characters upon which the key is based are necessarily not absolute, but rather comparative; they are those exhibited by adult birds in fresh plumage.

Key to the Species and Subspecies of Pipromorpha.

- A. Tertiaries (and wing-coverts) without pale terminal margins.
- a. Head grayish all around..... *Pipromorpha rufiventris*.
- a'. Head greenish above (*Pipromorpha macconnelli*).
- b. Posterior under parts paler, more buffy.
- c. Below brighter, more rufescent.
Pipromorpha macconnelli amazona.
- c'. Below duller, more buffy.
Pipromorpha macconnelli macconnelli.
- b'. Posterior under parts brighter, yellow ocher.
Pipromorpha macconnelli roraimæ.
- A'. Tertiaries with conspicuous paler terminal margins.
- a. Wing-coverts tipped with buffy; no grayish shade on throat (*Pipromorpha oleaginea*).
- b. Throat shaded with ochraceous, almost uniform with rest of under surface.....*Pipromorpha oleaginea oleaginea*.
- b'. Throat more or less shaded with greenish, contrasting with rest of under surface.
- c. Below richer, more rufescent.
- d. Coloration deeper; abdomen yellow ocher; breast citrine
Pipromorpha oleaginea chloronota.
- d'. Coloration paler; abdomen nearer antimony yellow; breast more buffy.
- e. Darker (especially the upper tail-coverts and tail)
Pipromorpha oleaginea pallidiventris.
- e'. Paler (especially the upper tail-coverts and tail)
Pipromorpha oleaginea parca.
- c'. Below paler, more buffy.....*Pipromorpha oleaginea pacifica*.
- a'. Wing-coverts without buffy tips; chin and upper throat shaded with grayish (*Pipromorpha assimilis*).
- b. Darker and duller.....*Pipromorpha assimilis dyscola*.
- b'. Lighter and brighter.....*Pipromorpha assimilis assimilis*.

***Pipromorpha rufiventris* (CABANIS).**

Mionectes rufiventris CABANIS, in Tschudi. Fauna Peruana, Aves, 1845, 148, note (Brazil; orig. descr.; type in coll. Berlin Mus.; ex *Muscicapa rufiventris* Lichtenstein, MS.).—CABANIS, Arch. f. Naturg., 1847, 251 (ref. orig. descr.).—BURMEISTER, Syst. Ueb. Thiere Bras., II, 1856, 482 (southern Brazil; descr.).—(?)BURMEISTER, Reise La Plata-Staaten, II, 1861, 453 (Tucumán, Argentina; references).—VON PELZELN, Orn. Bras., ii, 1869, 104 (Rio Janeiro, Registro do Sai, Ypanema, and Curytiba, Brazil).—VON PELZELN, Nunquam Otiosus, II, 1872, 292 (Neu Freiburg, Brazil).—SCLATER and SALVIN, Nom. Avium Neotrop., 1873, 47 (range).—GIEBEL, Thes. Orn., II, 1875, 596 (ref. orig. descr.).—VON BERLEPSCH and VON IHERING, Zeits. ges. Orn., II, 1885, 131 (Taquara do Mundo Novo, Brazil).—SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 114 (Curytiba and Pelotas, Brazil; descr.; references).—SALVIN and GODMAN,

- Biol. Centr.-Am., Aves, II, 1888, 23, in text (diag.; range).—GÆLDI, Aves do Brasil, 1894, 328 (Organ Mts., Brazil).—KÆNIGSWALD, Journ. f. Orn., XLIV, 1896, 357 (São Paulo, Brazil, ex Burmeister and von Pelzeln).—VON IHERING, Rev. Mus. Paulista, III, 1898, 190 (Iguape, Tieté, and Ypiranga, Brazil; Brazilian references and range; diag.).—VON IHERING, Proc. Zool. Soc. London, 1899, 513 (local range in Brazil).—VON IHERING, Rev. Mus. Paulista, IV, 1900, 155 (Cantagallo and Nova Friburgo, Brazil).—SHARPE, Hand-List Birds, III, 1901, 114 (range).—DUBOIS, Syn. Avium, I, 1902, 237 (references; range).—VON IHERING, Rev. Mus. Paulista, V, 1902, 313 (São Paulo, Brazil).—VON IHERING, Auk, XXI, 1904, 314, in text (Brazil; nest).—HAGMANN, Bol. Mus. GÆLDI, IV, 1904, 243 (Burmeister's reference), 284 (von Pelzeln's reference).—VON IHERING, Rev. Mus. Paulista, VI, 1904, 325 (Paraguay, ex Bertoni).—VON IHERING, Aves do Brazil, 1907, 277 (Estado do São Paulo, Ypiranga, Itatiba, Tieté, Iguape, and Ubatuba, Brazil; range).—HARTERT and VENTURI, Nov. Zool., XVI, 1909, 200 (Iguazu, Misiones, Argentina).—CHUBB, Ibis, 1910, 581 (Sapucay, Paraguay, crit.).—BRABOURNE and CHUBB, Birds S. Am., I, 1912, 284 (ref. orig. descr.; range).—DABBENE, Physis, I, 1914, 342 (Santa Ana, Argentina).—HELLMAYR, Verh. Orn. Ges. Bayern, XII, 1915, 134 (Espirito Santo, Brazil; crit.).
- Elania rufiventris* GRAY, Gen. Birds, III, 1849, Appendix, 11 (in list of species).
- Pipromorpha rufiventris* CABANIS and HEINE, Mus. Heineanum, II, 1859, 56 (Brazil; references).—CABANIS, Journ. f. Orn., XXII, 1874, 88 (Cantagallo, Brazil).—GIEBEL, Thes. Orn., III, 1877, 203 (syn.).—HEINE and REICHENOW, Nom. Mus. Heineani Orn., 1883, 141 (Brazil).—RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 454 (diag.; range; references).—DABBENE, An. Mus. Nac. Buenos Aires, (3), XI, 1910, 332 (Misiones, Argentina; local range).
- Elainia rufiventris* GRAY, Hand-List Birds, I, 1869, 355 (range).
- Hemitricus* (sic) *barbarenae* BERTONI, Aves Nuevas del Paraguay, 1901, 124 (Puerto Bertoni. lat. 25° 47', Paraguay; orig. descr.; type in coll. —(?); habits.
- Hemitricus barbarenae* RICHMOND, Auk, XIX, 1902, 416 (ref. orig. descr.).—LYNCH-ARRIBALZAGA, An. Mus. Nac. Buenos Aires, VII, 1902, 365, 387 (crit.).

Description.—Adult: back plain olive green; wings and tail dull brown, externally dark citrine; pileum and hindneck neutral gray, more or less washed with olive green; sides of head neutral gray without greenish tinge; throat also neutral gray, sometimes with a buffy or rufescent wash, passing into rich yellow ocher on the rest of the lower parts and under wing-coverts, becoming brighter and purer on the crissum: "iris brown; feet plumbeous;" bill brown above, pale below. (Young not seen).

Measurements.—Male (five specimens): wing, 67–72 (70); tail, 53–57 (55); bill, 11–12.5 (11.7); tarsus, 16–17 (16.5). (No female specimens examined.)

Range.—Southern Brazil, from Rio Janeiro to Rio Grande do Sul, and thence westward through northeastern Argentina (Misiones) to the Parana River in Paraguay.

Remarks.—This is a very distinct species, differing from the others of this group in its gray head. The variation in the color of the under surface is comparable to that shown by certain of the other forms. The outer primary also varies in the amount of narrowing; it is well marked in only one of the specimens examined.

So far as known the range of this species does not impinge upon that of any other form of this group. It was described by Cabanis in 1845 from a specimen in the Berlin Museum without exact locality, but remained otherwise unknown until a record of the eight specimens obtained by Natterer in southern Brazil was published by von Pelzeln in 1869. In more recent years von Ihering and other workers in this field have done much to make the bird better known, while it has been traced westward as far at least as the Rio Parana in Paraguay. Burmeister's record for Tucumán, however, we think is open to question. Save for the unfortunate lapse by Señor Bertoni noted above, the species has escaped synonyms. It is still rare in collections, however, and very little appears to have been put on record concerning its habits and characteristics in life.

Specimens examined.—Brazil: Ubatuba, São Paulo, 2; Fazenda Cayoa, 1; unspecified, 3. Argentina: Puerto Segundo, Misiones, 1; Iguazu, Misiones, 1. Total, 8.

***Pipromorpha macconnelli macconnelli* CHUBB.**

Mionectes oleagineus (not *Muscicapa oleaginea* Lichtenstein) SALVIN, Ibis, 1885, 293, part (Bartica Grove and Camacusa, British Guiana).

[*Mionectes oleagineus*] b. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 113, part (Bartica Grove and Camacusa, British Guiana).

Pipromorpha oleaginea macconnelli CHUBB, Ann. and Mag. Nat. Hist., (9), IV, 1919, 303 (Kamakabra River, British Guiana; orig. descr.; type in MacConnell Coll.).

Description.—Above plain olive green, wings and tail dusky brownish, externally citrine, without trace of paler wing-bars or of terminal spots on the tertiaries; sides of head and neck olive green like the back, passing into dull citrine on the throat and breast, and this into rich buff on the abdomen, the crissum and under wing-coverts still deeper buff (near orange buff); inner margins of remiges also rich buff; bill and feet dark (in skin), except the basal half of the lower mandible.

Measurements.—Male: wing, 62–68 (66.5); tail, 46–51 (48.5); bill, 9.5–11.5 (10.7); tarsus, 14.5–16.5 (15.5). Female (seven specimens): wing 59–63 (61); tail, 44–48 (46); bill, 10–11.5 (11); tarsus, 14.5–16 (15).

Range.—British Guiana (except more elevated parts) to French Guiana and adjacent northern Brazil.

Remarks.—The above name, based on a bird from the lowlands of British Guiana, which is described as "darker on the upper parts than any of the

other forms," evidently applies as well to the large series from French Guiana examined in this connection. This series represents a form which is obviously specifically distinct from the form with buffy wing-bands, with which it occurs associated, and the name *macconnelli* of Chubb, being the first applied to the plain-winged bird, will thus become the specific appellation of the group. Our series is very uniform, although specimens taken in the fall months are perhaps a trifle darker than those shot in May and June. From one to three outer primaries are narrowed terminally in a majority of the specimens. There is no difficulty whatever in distinguishing the series as a whole, or any individual example, from the form of *P. oleaginea* inhabiting the same region.

Specimens examined.—French Guiana: Tamanoir, 24; Mana, 1; Pied Saut, 14. Brazil: Upper Rocana, 1. Total, 40.

***Pipromorpha macconnelli roraimæ* CHUBB.**

Mionectes oleagineus (not *Muscicapa oleaginea* Lichtenstein) SALVIN, Ibis, 1885, 293, part (Mount Roraima and Merumé Mountains, British Guiana; crit.).

[*Mionectes oleagineus*] b. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 113, part (Mount Roraima and Merumé Mountains, British Guiana).

Pipromorpha oleaginea roraimæ CHUBB, Ann. and Mag. Nat. Hist., (9), IV, 1919, 303 (Mount Roraima [type-locality] and Merumé Mountains, British Guiana; orig. descr.; type in coll. Brit. Mus.).

Subspecific characters.—Similar to *Pipromorpha macconnelli macconnelli*, but more richly colored throughout, the wings and tail edged with dull orange citrine, and the upper tail-coverts, throat, and upper breast strongly shaded with this same color, passing into bright yellow ocher on the posterior under parts, axillars, and under wing-coverts.

Measurements.—Male (four specimens): wing, 61–64 (63); tail, 43–48 (45); bill, 11–12 (11.6); tarsus, 15–17 (16).

Range.—Known only from Mount Roraima and the Merumé Mountains, British Guiana.

Remarks.—Judging from the available material, the present form is a strongly characterized one, being decidedly more richly colored than true *macconnelli*, the under parts especially, which are fully as deep as in *P. rufiventris*. So far as known, it is confined to the highlands of British Guiana, from 3500 feet upwards, the type coming from Mount Roraima. While there are specimens extant of both this form and *P. oleaginea chloronota* collected by Whitely from the Merumé Mountains, Mr. Chubb's description was certainly based on a bird of the plain-winged type.

Specimens examined.—British Guiana: Mount Roraima, 3; Merumé Mountains, 1. Total, 4.

***Pipromorpha macconnelli amazona*, subsp. nov.**

Mionectes oleagineus (not *Muscicapa oleaginea* Lichtenstein) GÆLDI, Album de Aves Amazonicas, III, 1900, pl. 35, fig. 1 (Lower Amazon,

Brazil).—SNETHLAGE, Journ. f. Orn., LVI, 1908, 526, part (Arumatheua, Rio Tocantins; Brazil); LXI, 1913, 524, part (lower Amazon, Brazil; local range).—SNETHLAGE, Bol. Mus. Gældi, VIII, 1914, 413 part (localities in lower Amazonia, Brazil; descr.).

Mionectes oleagineus oleagineus HELLMAYR, Nov. Zool., XIII, 1906, 360, part ([San Antonio do] Prata, Pará district, Brazil).—HELLMAYR, Abhand. K. Bayerischen Akad. Wiss., Math.-phys. Kl., XXVI, 1912, 22, part (Peixe-Boi, Mexiana Island, Brazil), 89 (localities in Pará district), 106, 119 (Mexiana Island).

Type, No. 51,396, Collection Carnegie Museum, adult male; Buenavista, Santa Cruz de la Sierra, Bolivia, June 21, 1915; José Steinbach.

Subspecific characters.—Similar to *Pipromorpha macconnelli macconnelli*, but under parts brighter, more rufescent, the abdomen buffy light orange yellow, brightening into warm orange buff in the crissum.

Measurements.—Male: wing, 64–69 (66.3); tail, 45–52 (48.5); bill, 11–12.5 (11.5); tarsus, 15–17 (15.6). Female: wing, 59–62 (60.5); tail, 42–46 (44.5); bill, 9.5–11.5 (10.8); tarsus, 14–16.5 (15).

Range.—Valley of the Lower Amazon, west and south to central Bolivia, but exact limits of range unknown.

Remarks.—This form also differs from typical *macconnelli* in its richer coloration, but the variation is in a different direction from that it takes in *roraimæ*, as above indicated. Individual variation is also in evidence, some specimens being obviously darker green above (or even with a brownish tinge), and duller below than others from the same locality, the latter appearing to be in fresher plumage. Bolivian skins are slightly paler and more uniform below, but after careful examination of the series as a whole we are satisfied that no formal separation between Bolivian and lower Amazonian specimens is admissible.

Authors have uniformly failed to discriminate this form from *P. oleaginea chloronota*, the two species occurring together throughout the range of the present bird, apparently equally common. In a series of forty-three specimens of *Pipromorpha* from various localities in lower Amazonia, forwarded for study by the Gældi Museum, there are twenty-five examples of *P. oleaginea chloronota* and eighteen of *P. macconnelli amazona*, and the series from this region in the Carnegie Museum collected by Mr. Samuel M. Klages divide up in a very similar ratio. Both forms are represented in the specimens from San Antonio do Prata in the Tring Museum, as we are informed by Dr. Hartert, but without such further information it is of course impossible to place with any certainty many of the published records from this general region, or to define the range of the present form with precision.

Specimens examined.—Brazil: Benevides, 9; Colonia do Mojuy, 1; Villa Braga, 12; Miritituba, 3; Aveiros, 2; Cameta, Rio Tocantins, 2; San Antonio do Prata, 2; Ananindeua, 1; Providencia, 1; Ourém, 1; Peixe-Boi, 2; Santa Helena, Rio Jamauchim, 1; Conceição, 2; Arumatheua, 2. Bolivia: Buenavista, 4; Rio Surutu, 1; Cerro Hosane, 1. Total, 47.

Pipromorpha oleaginea (LICHTENSTEIN).

The following references are of such general, indefinite, or uncertain application that it has not been possible to allocate them subspecifically.

Muscicapa chloronotis LESSON, *Traité d'Orn.*, 1831, 392 (Brazil [Delalande]; *nomen nudum*).

Mionectes oleagineus CABANIS, in Tschudi, *Fauna Peruana, Aves*, 1845, 148, note (Cayenne, French Guiana; Brazil; descr.).—CABANIS, *Arch. f. Naturg.*, 1847, 251 (in list of species; references).—CABANIS, in Schomburgk, *Reisen in Britisch-Guiana*, III, 1848, 702 (Cayenne, French Guiana; Brazil).—SCLATER, *Proc. Zool. Soc. London*, 1859, 45 (range).—SCLATER, *Cat. Am. Birds*, 1862, 213, part ("Bogotá," Colombia).—SCLATER and SALVIN, *Nom. Avium Neotrop.*, 1873, 47, part (range).—GIEBEL, *Thes. Orn.*, II, 1875, 596 (syn.).—GARROD, *Proc. Zool. Soc. London*, 1876, 517 (artery).—SALVIN, *Cat. Strickland Coll.*, 1882, 306 (references).—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, II, 1888, 22, part (South American range and references).—VON BERLEPSCH, *Zeits. ges. Orn.*, IV, 1888, 184 ("Bogotá," Colombia).—SCLATER, *Cat. Birds Brit. Mus.*, XIV, 1888, 112, part (descr.; references).—BANGS, *Proc. New England Zool. Club*, II, 1900, 21, in text (crit.).—BANGS, *Auk*, XVIII, 1901, 362, in text (crit.).—DUBOIS, *Syn. Avium*, I, 1902, 237 (references; range).—BRABOURNE and CHUBB, *Birds S. Am.*, I, 1912, 284 (ref. orig. descr.; range).

Elainia oleaginea GRAY, *Hand-list Birds*, I, 1869, 355 (syn.; range).

Pipromorpha oleaginea GIEBEL, *Thes. Orn.*, III, 1877, 203 (syn.).

Mionectes oleaginus SHARPE, *Hand-List Birds*, III, 1901, 114 (range).

Myiornetes [lapsus] oleaginus VON IHERING, *Rev. Mus. Paulista*, VI, 1904, 369 (range).

Pipromorphia oleaginea oleaginea RIDGWAY, *Bull. U. S. Nat. Mus.*, No. 50, IV, 1907, 454 (diag.; range; references; crit.) 457, note (meas.).

Pipromorpha oleaginea is a plastic species, dividing into no less than five recognizable races. It may invariably be distinguished from *P. macconnelli*, with which it is associated throughout a large section of its range, by the color of its wings, in which the middle and greater wing-coverts are tipped with buffy or yellowish, and the inner secondaries broadly margined with the same color. In worn plumage this edging is more or less reduced, but is always evident upon close inspection. *P. oleaginea* also averages a little smaller, sex for sex.

Pipromorpha oleaginea oleaginea (LICHTENSTEIN).

Muscicapa oleaginea LICHTENSTEIN, *Verz. Doubl.*, 1823, 55 (Bahia, Brazil; orig. descr.; type in coll. Berlin Mus.).

Elania oleaginea HARTLAUB, *Syst. Verz. Nat. Samm. Ges. Mus. [Bremen]*, 1844, 53 (Brazil; ref. orig. descr.).—GRAY, *Gen. Birds*, I, 1846, 250 (ref. orig. descr.).

Mionectes oleagina BONAPARTE, *Consp. Avium*, I, 1850, 187 (ref. orig. descr.; range).

Mionectes oleagineus VON BERLEPSCH, Journ. f. Orn., XXXII, 1884, 299, part (Bahia, Brazil).—SALVIN, Ibis, 1885, 293, part (Bahia, Brazil).

—VON BERLEPSCH, Nov. Zool., XV, 1908, 136, part (Bahia, Brazil).

[*Mionectes oleagineus*] b. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 113, part (Bahia, Brazil).

Mionectes oleagineus oleagineus HELLMAYR, Nov. Zool., XIII, 1906, 360, part (Bahia, Brazil); XVII, 1910, 292, part (Bahia, Brazil).

Description.—Above plain dull olive green; wings dusky brown, externally citrine (except toward tip), the greater and middle coverts tipped with buffy ochraceous, forming two wing-bars; inner secondaries with buffy or buffy ochraceous external edgings towards their tips; tail dull grayish brown, washed with citrine externally; sides of head and neck dull olive green like the back; entire under parts yellow ocher, nearer old gold on the upper throat, with little or no olivaceous shading.

Measurements.—Six adults, unsexed: wing, 59–64 (62); tail, 45–51 (48); bill, 9.5–10.5 (10); tarsus, 13.5–15.5 (14.5).

Range.—Known only from the vicinity of Bahia, eastern Brazil.

Remarks.—This, the typical race, appears to be known only from so-called Bahia trade-skins, although it undoubtedly has a wide range in eastern Brazil. It was described by Lichtenstein almost one hundred years ago from such a specimen, which is still extant in the Berlin Museum. No mention is made in the description of any wing-bars or colored tips to the secondaries, but Dr. Ernst Hartert, who recently examined the type at the writer's request, found it to agree closely with a colored sketch representing a supposed Bahia specimen possessing these characters. This form is characterized by the generally deep and uniform coloration of the under surface, with very little olivaceous shading on the throat and breast.

Specimens examined.—Brazil: "Bahia," 6.

***Pipromorpha oleaginea chloronota* (D'ORBIGNY and LAFRESNAYE).**

Muscicapa chloronotus D'ORBIGNY and LAFRESNAYE, Synopsis Avium, in Guerin's Mag. de Zool., 1837, ii, 51 (Yuracares, Bolivia; orig. descr.; ex *Muscicapa chloronotis* Lesson, 1831 [nomen nudum]; type in coll. Paris Mus.[?]).

Muscicapara oleaginea (not *Muscicapa oleaginea* Lichtenstein) D'ORBIGNY, Voy. Am. Mér., Oiseaux, 1839, 323 (Yuracares, Bolivia; descr.).

Mionectes oleagineus SCLATER, Proc. Zool. Soc. London, 1858, 71 (Rio Napo, Ecuador).—(?)SCLATER, Cat. Am. Birds, 1862, 213, part (Cayenne, French Guiana; "Bogotá," Colombia).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1866, 188 (upper Ucayali, Peru); 1867, 577 (Pará and Guia, Brazil), 751 (Xeberos and Chyavetas, Peru), 978 (Pebas, Peru).—VON PELZELN, Orn. Brasiliens, ii, 1869, 104 (Engenho do [Capa] Gama, Borba, Marabitanas, Barcellos, and Barra [do Rio Negro], Brazil).—LAYARD, Ibis, 1873, 382 (Pará, Brazil).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1873, 278 (Peruvian localities and references); 1879, 613 (Yuracares, Bolivia, ex D'ORBIGNY).—TACZANOWSKI, Proc. Zool. Soc. London, 1882, 19 (Yurimaguas, Peru).—TACZANOWSKI, Orn. Perou,

- II, 1884, 245 (Xeberos, Chyavetas, Pebas, and Yurimaguas, Peru; descr.; references; crit.).—RIKER and CHAPMAN, Auk, VII, 1890, 270 (Santarem, Brazil).—GÆLDI, Bol. Mus. Paraense, I, 1896, 346 (Pará and Guia, Brazil [ex von Pelzeln]), 353 (Pará, Brazil [ex Layard]).—VON BERLEPSCH and HARTERT, Nov. Zool., IX, 1902, 41 (Nericagua, Suapure, La Pricion, Nicare, and La Union, Venezuela).—GÆLDI, Bol. Mus. Paraense, III, 1902, 291 (Pará, Pebas, Borba, and Guia, "Amazonia" [ex Sclater]).—GÆLDI, Ibis, 1903, 486, in text, 499 (Poço Real, Rio Capim, Brazil).—HAGMANN, Bol. Mus. Gœldi, IV, 1904, 243 (Burmeister's reference), 284 (von Pelzeln's reference).—MENEGAUX, Bull. Mus. d'Hist. Nat., 1908, 11 (French Guiana).—(?)VON BERLEPSCH, Nov. Zool., XV, 1908, 136 (Roche-Marie and Ipousin, French Guiana; crit.).—SNETHLAGE, Journ. f. Orn., LVI, 1908, 526, part (Arumatheua, Rio Tocantins, Brazil).—(?)PENARD, Vogels van Guyana, II, 1910, 222 (Guiana; descr.; habits).—SNETHLAGE, Journ. f. Orn., LXI, 1913, 524, part (lower Amazon, Brazil; local range).—SNETHLAGE, Bol. Mus. Gœldi, VIII, 1914, 413, part (localities in lower Amazonia).
- Pipromorpha oleaginea* (?)CABANIS and HEINE, Mus. Heineanum, II, 1859, 55, part (Peru, Surinam, and Cayenne).—(?)HEINE and REICHENOW, Nom. Mus. Heineani Orn., 1883, 141, part (Peru, Surinam, and Cayenne).
- [*Mionectes oleagineus*] b. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 113, part (Sarayacu, Ecuador; Pebas and Chamicuros, Peru; Pará, Guia, and Borba, Brazil).
- Mionectes oleaginus* VON IHERING, Rev. Mus. Paulista, VI, 1904, 434, excl. extralimital localities, part (Rio Juruá, Brazil).—VON IHERING, Aves do Brazil, 1907, 276, part (Rio Juruá, Brazil; range).
- Mionectes oleagineus oleagineus* HELLMAYR, Nov. Zool., XIV, 1907, 47 (Teffé, Rio Solimoes, Brazil), 356 (Humaytha, Rio Madeira, Brazil); XVII, 1910, 292 (Calama and Jamarysinho, Brazil).—BEEBE, Zoologica, II, 1916, 64, 89 (Pará, Brazil; habits).
- Mionectes oleagineus pallidiventris* (not of Hellmayr) STONE, Proc. Acad. Nat. Sci. Philadelphia, 1913, 203 (Cariaquito, Venezuela).
- Pipromorpha oleaginea oleaginea* CHERRIE, Mus. Brooklyn Inst. Sci. Bull., II, 1916, 226 (Nericagua, La Union, and Suapure, Venezuela).—CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXVI, 1917, 449 (Villavicencio and Florencia, Colombia; Suapure, Venezuela; crit.).—BANGS and PENARD, Bull. Mus. Comp. Zool., LXII, 1918, 76 (Paramaribo and Lelydorp, Dutch Guiana).
- Pipromorpha oleaginea wallacei* CHUBB, Ann. and Mag. Nat. Hist., (9), IV, 1919, 301 (Pará [type-locality] and Rio Negro, Brazil; orig. descr.; type in coll. Brit. Mus.).
- Pipromorpha oleaginea hauxwelli* CHUBB, Ann. and Mag. Nat. Hist., (9), IV, 1919, 301 (Pebas, Peru; orig. descr.; type in coll. Brit. Mus.).
- Pipromorpha oleaginea chapmani* CHUBB, Ann. and Mag. Nat. Hist., (9), IV, 1919, 302 ("Villavicencio to Medina," Colombia; orig. descr.; type in coll. Brit. Mus.).

Subspecific characters.—Similar to *Pipromorpha oleaginea oleaginea*, but

throat more or less shaded with olivaceous, in contrast with the rest of the under surface.

Measurements.—Male: wing, 58–65 (62); tail, 45–50 (47); bill, 9.5–11.5 (10); tarsus, 13.5–16 (14.7). Female: wing, 56–59 (57.5); tail, 42–47 (44); bill, 10–11 (10.5); tarsus, 13–15.5 (14.5).

Range.—Northern Brazil (“Amazonia”) to Guiana and Venezuela (south of the Orinoco), west to the Andes, and south into central Bolivia.

Remarks.—This form is to be distinguished by its rich, deep coloration below, in which respect it often goes beyond true *oleaginea*, the abdomen being rich yellow ocher, but the throat and breast are more strongly shaded with olivaceous, so that the under parts are more distinctly bicolor. The range of variation is considerable, however, but inasmuch as it obtains in specimens from the same locality it is certainly only individual or seasonal, rather than geographical. Specimens from Villavicencio, Colombia (the type-locality of *chapmani* Chubb) are indistinguishable, so far as we can see, from others from Pebas, Peru (the type-locality of *hauxwelli* of the same author), and these are collectively not satisfactorily separable from a series from Villa Braga on the Tapajoz River in Brazil, and from some others coming from the Pará district. Mr. Chubb’s description of *wallacei* indicates that it too was based on a bird of this type, the wing being given as only 61 mm. in length. Furthermore, two specimens from Dutch Guiana and one from British Guiana, as well as one from Cariaquito, Venezuela, are fully as richly colored below as specimens from the Caura River, all certainly referable to one and the same form. A series from French Guiana, on the other hand, are somewhat paler, and might readily be referred to *pallidiventris*, were it not for the discontinuous distribution which would be involved thereby. In short, after examining an unusually fine series of specimens, and after making due allowance for such individual and seasonal variation as exists, we can not see our way clear to recognizing more than one form for the vast region drained by the Amazon River, and extending northward into Guiana and Venezuela. For this we accept the name *chloronota* of D’Orbigny and Lafresnaye, described from eastern Bolivia, whence we have a good suite of specimens. There can be no doubt of the application of this name, since the description clearly indicates a bird with ochraceous wing-bars. The allocation of some of the above references to the present form, however, is not so certain, since without actual examination of the specimens upon which they were based it is impossible to say whether they really belong here or to the form with plain wings.

Specimens examined.—Colombia: “Bogotá,” 3; Florencia, 2; Villavicencio, 2. Venezuela: Suapure, 1; Cariaquito, 1; Rio Mocho, 1; El Llagual, 2; unspecified, 1. British Guiana: Merumé Mountains, 1. Dutch Guiana: Paramaribo, 2; Lelydorp, 1. French Guiana: Cayenne, 3; Mana, 1; Pied Saut, 8. Peru: Pebas, 1. Bolivia: Santa Cruz de la Sierra, 1; Rio Yapacani, 6; Buenavista, 1; Rio Surutu, 1; Mouth of Rio San Antonio, Rio Espirito Santo, 1. Brazil: Benevides, 5; Utinga (near Pará), 6; Pará, 1; Santarem, 5; Diamantina (near Santarem), 1; Boim, Rio Tapajoz, 1; Conceição, Rio Uaju, 2; Arumatheua, Rio Tocantins, 2;

Ananindeua, 4; Avojutuba, Rio Negro, 1; Manacapuru, Rio Solimoes, 2; Tamucury, 1; Providencia, 1; Santa Helena, Rio Jamauchim, 1; Colonia do Veado, 2; Faro, Rio Jamundá, 1; Colonia do Mojuy, 1; Villa Braga, 6; Apacy, 1. Total, 88.

Pipromorpha oleaginea pallidiventris (HELLMAYR).

Mionectes oleagineus (not *Muscicapa oleaginea* Lichtenstein) SCLATER, Cat. Am. Birds, 1862, 213, part (Tobago).—TAYLOR, Ibis, 1864, 85 (Trinidad).—CHAPMAN, Bull. Am. Mus. Nat. Hist., IV, 1892, 54 (El Pilar, Venezuela); VI, 1894, 38 (Trinidad).—PHELPS, Auk, XIV, 1897, 365 (San Antonio, Venezuela).

Elania oleaginea LEOTAUD, Ois. Trinidad, 1866, 235 (Trinidad; descr.; habits).

Myionectes [lapsus] *oleaginus* DALMAS, Mém. Soc. Zool. France, XIII, 1900, 138 (Tobago).

Mionectes oleagineus pallidiventris HELLMAYR, Nov. Zool., XIII, 1906, 22 (San Antonio, Bermudez, Venezuela [type-locality]; Caparo and Valencia, Trinidad; Castare, Tobago; orig. descr.; type in coll. Tring Mus.).—CHERRIE, Mus. Brooklyn Inst. Sci. Bull., I, 1906, 189 (Heights of Aripo, Trinidad).

Pipromorpha oleagineus [sic] *pallidiventris* CHERRIE, Mus. Brooklyn Inst. Sci. Bull., I, 1908, 361 (Carenage, Trinidad).

Mionectes pallidiventris BRABOURNE and CHUBB, Birds S. Am., I, 1912, 284 (ref. orig. descr.; range).

Pipromorpha oleaginea tobagoensis CHUBB, Ann and Mag. Nat. Hist., (9), IV, 1919, 302 (Tobago; orig. descr.; type in coll. Brit. Mus.).

Subspecific characters.—Similar to *Pipromorpha oleaginea chloronota*, but averaging paler, more buffy, less ochraceous below, with less olivaceous shading on the throat and breast; upper parts also averaging paler.

Measurements.—Male (six specimens): wing, 59–66 (63); tail, 43–53 (48); bill, 10–12 (11); tarsus, 15.5–16.5 (16). Female (six specimens): wing, 57–60 (59); tail, 43–47 (45); bill, 10–11 (10.5); tarsus, 14–15.5 (15).

Range.—Northeastern Venezuela to the islands of Trinidad and Tobago.

Remarks.—Birds from the type-locality of this race agree well with Trinidad skins, as remarked by Mr. Hellmayr, who discriminated the form in 1906. Typical specimens are easily separated from the Amazon Valley birds (*chloronota*) by their generally paler, duller coloration, in which respect they approach the form from northern Colombia (*parca*), being in fact intermediate between the two. The only Tobago specimen we have examined does not seem to present any special peculiarities, and we therefore follow Mr. Hellmayr in considering birds from that island the same as those from Trinidad. We would accordingly restrict *pallidiventris* to the arid coast region of northeastern Venezuela, extending thence to Trinidad and Tobago.

Specimens examined.—Venezuela: El Pilar, 2; San Antonio, 3. Trinidad: Carenage, 5; Heights of Aripo, 1; Heights of Orepouche, 2; Poole, 1; Princetown, 4; unspecified, 1. Tobago, 1. Total, 19.

Pipromorpha oleaginea parca (BANGS).

- Mionectes assimilis?* (not of Sclater) LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., VII, 1861, 328 (Panama Railway, Panama; crit.).
- Mionectes oleagineus* (not *Muscicapa oleaginea* Lichtenstein) SCLATER and SALVIN, Proc. Zool. Soc. London, 1864, 358 (Lion Hill, Panama; crit.); 1879, 512 (Remedios, Antioquia, Colombia).—VON BERLEPSCH, Journ. f. Orn., XXXII, 1884, 299 (Bucaramanga, Colombia).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, II, 1888, 22, part (Lion Hill, Panama; extralimital range, part).—BANGS, Proc. Biol. Soc. Washington, XII, 1898, 136 ("Santa Marta," Colombia).—ALLEN, Bull. Am. Mus. Nat. Hist., XIII, 1900, 149 (Bonda, Minca, and Cacagualito, Colombia).—BANGS, Auk, XVIII, 1901, 28 (San Miguel Island, Panama; crit.).
- [*Mionectes oleagineus*] a. Subsp. *assimilis* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 113, part (Panama).
- Mionectes oleagineus parvus* BANGS, Proc. New England Zool. Club, II, 1900, 20 (Loma del Leon [Lion Hill], Panama; orig. descr.; type now in coll. Mus. Comp. Zool.).—BANGS, Auk, XVIII, 1901, 362, in text (crit.). HELLMAYR, Nov. Zool., XIII, 1906, 22, in text (crit.).
- Mionectes parvus* SHARPE, Hand-List Birds, III, 1901, 114 (ref. orig. descr.; range).
- Mionectes oleaginus oleaginus* THAYER and BANGS, Bull. Mus. Comp. Zool., XLVI, 1905, 151 (San Miguel Island, Panama; crit.).
- Pipromorpha oleaginea parca* RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 454 (diag.), 457 (descr.; range; references; meas.; crit.).—CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXVI, 1917, 449 (Puerto Valdivia, Honda, Chicoral, Andalucia, and "Santa Marta," Colombia; Colombian references; crit.).—STONE, Proc. Acad. Nat. Sci. Philadelphia, 1918, 264 (Gatun, Panama; descr. nest and eggs).—RENDAHL, Arkiv för Zoologi, XIII, No. 4, 1920, 34 (Viveros, Pearl Islands; crit.).

Subspecific characters.—Differs from *Pipromorpha oleaginea pallidiventris* in its paler coloration throughout, this particularly evident in the lighter tone of the upper tail-coverts and tail. The posterior under parts may be described as deep buff yellow, which gradually passes into yellowish citrine on the throat.

Measurements.—Male: wing, 60–64 (62); tail, 45–48 (46.5); bill, 10–11 (10.5); tarsus, 13.5–15.5 (14.5). Female: wing, 56–61 (59); tail, 41–47 (44); bill, 9.5–11 (10); tarsus, 12.5–14.5 (13.5).

Range.—Tropical Zone of northern Colombia, including the Santa Marta region, and the valleys of the Magdalena, Cauca, and Atrato Rivers, to and including the Isthmus of Panama and the Pearl Islands.

Remarks.—Lawrence remarked the peculiarities of Panama specimens of this group as far back as 1861, but later authors discounted the significance of their characters, and it was not until 1900 that Mr. Bangs came to the conclusion that they were referable to a hitherto unrecognized race of "*Mionectes*" *oleagineus*, which he proceeded to describe forthwith. At that time he considered that the bird of the Pearl Islands was nearer true

oleaginea as he understood that form, but Mr. Ridgway referred both these and Santa Marta examples to the new race without hesitation, and we agree in this conclusion. It is true that specimens from interior and western Colombia differ from the Santa Marta series in being slightly darker, both above and below, verging thus toward *pallidiventris*, with which, however, the present form can not directly intergrade, since there is a long stretch of country in northern Venezuela from which no form of the group is at present known.

A single specimen from La Colorada, Colombia, east of the Eastern Andes, is referred here provisionally, but a series from this locality might tell a different story. The present race is also sufficiently well contrasted with the dull-colored Ecuador form.

In juvenal dress (illustrated by No. 97,812, Collection American Museum of Natural History, Cacagualito, Colombia, May 12) the colors are all duller, and the under parts more rufescent. In fresh plumage the colors tend to be a little deeper in tone. Out of ninety-eight specimens examined in this connection, only fourteen have the outer primaries sufficiently narrowed at the tips to be noticeable.

Dr. Stone describes a nest found by the late Mr. L. L. Jewel in the Canal Zone as "a long pear-shaped structure with entrance on the side, made of green moss and fine grasses. Eggs three, pure white, .58 x .78, .57 x .76, and .56 x .75 in."

Specimens examined.—Panama: Loma del Leon (Lion Hill), 3; Gatun, 11; Rio Caño Quebrada, 1; San Miguel Island, 4; unspecified, 3. Colombia: Bonda, 22; Buritaca, 4; Cacagualito, 3; Mamatoco, 1; Minca, 6; La Tigra, 2; Las Vegas, 2; Don Diego, 11; La Colorada, 1; Jaraquiel, 1; Aguachica, 1; El Tambor, 5; Murindo, 6; Quibdo, 1; "Santa Marta," 4; Andalucia, 1; Honda, 1; Chicoral, 1; Puerto Valdivia, 2; Jimenez, 2. Total, 99.

Pipromorpha oleaginea pacifica, subsp. nov.

Mionectes oleagineus (not *Muscicapa oleaginea* Lichtenstein) SCLATER, Proc. Zool. Soc. London, 1860, 283 (Babahoyo, Ecuador).—VON BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. London, 1883, 553 (Chimbo, Ecuador; crit.); 1885, 68 (Chimbo, Mapoto, and Machay, Ecuador).—SALVADORI and FESTA, Bol. Mus. Zool. ed Anat. Comp. Torino, XIV, No. 362, 1899, 7 (Vinces, Ecuador).—HARTERT, Nov. Zool., IX, 1902, 607 (Carondelet, Ecuador; crit.).

Type, No. 59,495, Collection Academy of Natural Sciences of Philadelphia, adult female; Bucay, Guayas, Ecuador, June 22, 1911; Samuel N. Rhoads.

Subspecific characters.—Similar in general to *Pipromorpha oleaginea parca*, but under parts paler, more yellowish, less buffy.

Measurements.—Male (one specimen): wing, 59; tail, 47; bill, 10.5; tarsus, 15.5. Female (two specimens): wing, 58–60; tail, 42–45; bill, 10.5; tarsus, 14–15.5.

Range.—Tropical Zone of Western Ecuador.

Remarks.—In the respects just pointed out these three specimens differ

constantly and sufficiently from western Colombia skins to necessitate their separation under the above name. Both von Berlepsch and more recently Dr. Hartert have noted the peculiarities of specimens from this region, remarking that they resemble Central American birds (*assimilis*), which is correct.

Specimens examined.—Ecuador: Bucay, Guayas, 3.

***Pipromorpha assimilis dyscola* (BANGS).**

Mionectes oleagineus (not *Muscicapa oleaginea* LICHTENSTEIN) SALVIN, Proc. Zool. Soc. London, 1867, 147 (Santa Fé, Veragua).—LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., IX, 1868, 89 (Veragua; range), 111 (Costa Rica, fide Salvin).—SALVIN, Ibis, 1869, 315, in text, 318 (Costa Rica; crit.).—VON FRANTZIUS, Journ. f. Orn., XVII, 1869, 307, part (Costa Rica).—SALVIN, Proc. Zool. Soc. London, 1870, 196 (Calovevora, Boquete de Chitra, and Bugaba, Veragua).—SCLATER and SALVIN, Nom. Avium Neotrop., 1873, 47, part (range).—BOUCARD, Proc. Zool. Soc. London, 1878, 63 (San Mateo, Costa Rica).—ZELEDON, Cat. Aves Costa Rica, 1882, 14 (Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, II, 1888, 22, part and I, 1904, xxii, part (Costa Rican [part] and Panama [part] references and localities; crit.).—UNDERWOOD, Ibis, 1896, 438 (Volcano Miravalles, Costa Rica).—UNDERWOOD, Avifauna Costarriquena, 1899, 7, part (Costa Rica).

Mionectes assimilis (not of Sclater) LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., IX, 1868, 111 (Angostura, Guiatil, and "Payua" [Pacuare], Costa Rica).—VON FRANTZIUS, Journ. f. Orn., XVII, 1869, 307, part (Costa Rica).—ZELEDON, Cat. Aves Costa-Rica, 1882, 14, part (Costa Rica).—ZELEDON, Proc. U. S. Nat. Mus., VIII, 1885, 108, part (Costa Rica).—ZELEDON, An. Mus. Nac. Costa Rica, I, 1887, 116 (Poza Azul de Pirris, Las Trojas, and Monte Redondo, Costa Rica).—CHERRIE, Expl. Zool. en Costa Rica, 1891-2, 1893, 31 (Palmar, Lagarto, Boruca, and Terraba, Costa Rica).—SHARPE, Hand-List Birds, III, 1901, 114, part (range).

[*Mionectes oleagineus*] a. Subsp. *assimilis* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 113, part (Costa Rican [part] and Veraguan localities and references).

Mionectes oleaginosus (lapsus) CHERRIE, Expl. Zool. Rio Naranjo, 1893, 15 (Poza del Pital, Costa Rica; nesting).

Mionectes assimilis dyscolus BANGS, Auk, XVIII, 1901, 362 (Divala, Panama; orig. descr.; type now in coll. Mus. Comp. Zool.; crit.).—VON BERLEPSCH, Ornith., XIV, 1907, 493 (ref. orig. descr.).

Pipromorpha assimilis dyscola Ridgway, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 453 (diag.), 455, part (diag.; range; references; meas.; excl. localities in Nicaragua and eastern Costa Rica).—BANGS, Auk, XXIV, 1907, 300 (Boruca, Paso Real, Poza del Rio Grande, and Barranca, Costa Rica).—BANGS, Proc. Biol. Soc. Washington, XXII, 1909, 33 (Boruca, Poza Azul, and Buenos Aires, Costa Rica; crit.).—CARRIKER, Ann. Carnegie Mus., VI, 1910, 712 (Costa Rican localities and references; habits; crit.).

Subspecific characters.—Similar to *Pipromorpha assimilis assimilis*, but slightly smaller (except the bill); upper parts averaging slightly brighter green; and under parts darker and more uniform; the throat with less grayish and more greenish tinge, the posterior under parts duller, less buffy—olive lake tinged medially with mustard yellow.

Measurements.—Male: wing, 60–66 (63); tail, 46–53 (48.5); bill, 11.5–13 (12.2); tarsus, 14–16 (14.8). Female: wing, 57–63 (59); tail, 41–49 (44); bill, 11.5–13 (12.3); tarsus, 13.5–15.5 (14.7).

Range.—Pacific slope of Costa Rica to western Panama, in the Tropical Zone.

Remarks.—It is interesting to find that the authors who first had to do with specimens of this group from western Panama (or Veragua, as it was then called) were all careful to refer them to the South American form, and not to that of southern Mexico, which Sclater had already discriminated in 1857. In 1888 we find Salvin and Godman arguing against the recognition of a northern race, *assimilis*, on the ground of intergradation. There was thus good reason for suspecting the existence of more than one form north of Panama, and Mr. Bangs in 1901, with a good series of specimens at his command, was enabled to point out characters for separating them. We fully agree with this author in according specific rank to *P. assimilis*, since there is no evidence of intergradation between its southern race, *P. assimilis dyscola*, on the one hand and *P. oleaginea parca* on the other. Later Mr. Bangs undertook to show that *dyscola* was the form occupying the Pacific slope of Costa Rica, while the Carribbean slope was occupied by *assimilis*, more or less typical, and after examining the same material we indorse this conclusion also. A specimen from Miravalles (No. 27,219, Collection Carnegie Museum) appears to be intermediate, indicating that intergradation takes place in this region.

Twenty out of seventy-three specimens have the outer primary perceptibly but not decidedly emarginate at the tip. No. 17,817, Collection E. A. and O. Bangs, Boruca, Costa Rica, June 5, is the youngest bird in the series, with short tail. It resembles the adult, but is notably darker and duller. Several other fully grown birds from other localities agree with it in these respects and are obviously young in juvenal dress.

Specimens examined.—Panama: Divala, 6. Costa Rica: Pozo Azul de Pirris, 8; Miravalles, 1; El Pozo de Terraba, 2; Boruca, 24; Paso Real, 4; Pozo del Pital, 2; Buenos Aires, 4; Barranco, 3; Pozo del Rio Grande, 4; El General, 15. Total, 73.

***Pipromorpha assimilis assimilis* (SCLATER).**

Mionectes oleaginus (not *Muscicapa oleaginea* Lichtenstein) SCLATER, Proc.

Zool. Soc. London, "1856," 1857, 296 (Cordova, Vera Cruz, Mexico).—BOUCARD, Ann. Soc. Linn. Lyon, n. s., XXV, 1878, 50 (Guatemala).

Mionectes assimilis Sclater, Proc. Zool. Soc. London, 1859, 45 (range), 46 (Cordova, Mexico [type-locality]; Guatemala; orig. descr.; type now in coll. Brit. Mus.), 366 (Jalapa, Vera Cruz, Mexico).—SCLATER and SALVIN, Ibis, 1859, 124 (Sclater's record).—SCLATER, Ibis, 1859, 445 (Cordova,

- Mexico; range; references).—SCLATER, Cat. Am. Birds, 1862, 213 (Coban, Guatemala; "Mexico?"; references).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1864, 358, in text (crit.).—SUMICHRAST, Mem. Boston Soc. Nat. Hist., I, 1869, 556 ("Tierra caliente" of Vera Cruz, Mexico).—SALVIN, Ibis, 1869, 315, in text (Costa Rica; crit.).—VON FRANTZIUS, Journ. f. Orn., XVII, 1869, 307, part (Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1870, 837 ([San Pedro], Honduras).—GIEBEL, Thes. Orn., II, 1875, 596 (ref. orig. descr.).—ZELEDON, Cat. Aves Costa Rica, 1882, 14, part (Costa Rica).—ZELEDON, Proc. U. S. Nat. Mus., VIII, 1885, 108, part (Costa Rica).—BANGS, Proc. New England Zool. Club, II, 1900, 21, in text (crit.).—SHARPE, Hand-List Birds, III, 1901, 114, part (range).—BANGS, Auk, XVIII, 1901, 362, in text (crit.).
- Elainia assimilis* GRAY, Hand-List Birds, I, 1869, 355 (syn.; range).
- Mionectes oleagineus* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., IX, 1868, 111 (Costa Rica, fide Salvin).—VON FRANTZIUS, Journ. f. Orn., XVII, 1869, 307 (Costa Rica).—SCLATER and SALVIN, Nom. Avium Neotrop., 1873, 47, part (range).—NUTTING, Proc. U. S. Nat. Mus., VI, "1883," 1884, 402 ("Los Sábalos," Nicaragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, II, 1888, 22, part, and I, 1904, xxii, part (Mexican, Guatemalan, British Honduras, Salvador, and Costa Rican [part] localities and references; descr.; range; crit.).—UNDERWOOD, Avifauna Costarriquena, 1899, 7, part (Costa Rica).
- Pipromorpha assimilis* GIEBEL, Thes. Orn., II, 1877, 203 (syn.).—HEINE and REICHENOW, Nom. Mus. Heineani Orn., 1883, 141 (Cordova, Mexico).—DEARBORN, Field Mus. Orn. Series, I, 1907, 102 (Patulul, Guatemala).—BANGS, Proc. Biol. Soc. Washington, XXII, 1909, 33 (range; crit.).
- [*Mionectes oleagineus*] a. Subsp. *assimilis* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 113, part (Mexican, Guatemalan, and Costa Rican [part] localities and references).
- Mionectes semischistaceus* CHERRIE, Proc. U. S. Nat. Mus., XV, 1892, 27 (Guayabal, Costa Rica; orig. descr.; type in coll. U. S. Nat. Mus.).—UNDERWOOD, Avifauna Costarriquena, 1899, 7 (Costa Rica).—SHARPE, Hand-List Birds, III, 1901, 114 (ref. orig. descr.; range).
- Mionectes oleagineus assimilis* RICHMOND, Proc. U. S. Nat. Mus., XVI, 1893, 505 (Greytown and Escondido River, Nicaragua).—CHAPMAN, Bull. Am. Mus. Nat. Hist., X, 1898, 31 (Jalapa, Vera Cruz, Mexico; habits).—HARTERT, Nov. Zool., IX, 1902, 607, in text (crit.).—HELLMAYR, Nov. Zool., XIII, 1906, 22, in text (crit.).
- [*Mionectes*] *oleagineus*. Var. *assimilis* DUBOIS, Syn. Avium, I, 1902, 237, part (ref. orig. descr.; range).
- Pipromorpha assimilis assimilis* RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 453 (diag.), 454 (descr.; range; references), 456, note (meas.).—BANGS, Proc. Biol. Soc. Washington, XXII, 1909, 33 (Carrillo, Tenorio, and La Vijagua, Costa Rica; crit.).—CARRIKER, Ann. Carnegie Mus., VI, 1910, 713 (Costa Rican localities and references; crit.).—PETERS, Auk, XXX, 1913, 376 (Xcopen, Quintana Roo, Mexico).

Pipromorpha semischistacea RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 454 (diag.), 458 (descr.; range; references).—CARRIKER, Ann. Carnegie Mus., VI, 1910, 712 (Costa Rica; references; crit.).

Pipromorpha assimilis dyscola (not *Mionectes assimilis dyscolus* Bangs) RENDAHL, Arkiv för Zoologi, XII, No. 8, 1919, 24 (San Juan del Norte, Nicaragua; crit.).

Description.—Adult: above, including sides of head, and wings and tail externally, plain olive green, the pileum slightly darker and duller; median and greater wing-coverts with indistinct paler (citrine) tips, and inner secondaries with more or less obvious buffy edgings and tips; inner margins of all the remiges pale buffy toward the base; chin and throat dull grayish, tinged with olive, and passing into pale citrine or olive lake on the breast, where it is more or less flammulated with chamois color or honey yellow, which color covers the rest of the under surface, including the under wing-coverts; sides and flanks usually with some darker shading; "iris dark hazel; bill dark brown, paler at base below; feet plumbeous."

Young in juvenal dress (Mus. Comp. Zool. 74,629) similar, the posterior under parts more decidedly buffy.

Measurements.—Male: wing, 64–69 (67.5); tail, 50–55 (53); bill, 11.5–13 (12); tarsus, 15–16.5 (16). Female: wing, 61–66 (63); tail, 46–52 (49); bill, 11–13 (11.5); tarsus, 14.5–16 (15.3).

Range.—Tropical Zone of southern Mexico (States of Vera Cruz and Tabasco), southward through Central America to eastern Costa Rica.

Remarks.—Sclater at first referred specimens from Cordova, Vera Cruz, Mexico, to *Mionectes oleagineus*, but shortly thereafter he was led to describe them as a new species, which he called *assimilis*. In 1888 Slater reduced this to a subspecies of *oleagineus*, while Salvin and Godman declined to recognize it at all. The fine series we have examined in this connection, however, indicates that while the two forms are closely related, they are in our judgment best kept specifically separate, as claimed by Mr. Bangs and indorsed by Mr. Ridgway.

Ordinarily the species is subject to comparatively little variation, judging from the series examined. Some specimens have the throat grayer, in others it is more olivaceous and paler, but this is doubtless due to the fresher condition of the latter. The outer primaries are decidedly narrowed in fourteen out of thirty-seven specimens, while others still show traces of such a condition. Both sexes show this feature, assuming the specimens are correctly determined, and it may be purely dependent on age.

The type-specimen of *Mionectes semischistaceus* Cherrie, from Guayabal, Costa Rica, is an individual which has every appearance of being an abnormally colored example of the present form. It agrees in every respect with skins of *assimilis* from eastern Costa Rica, except for having the upper surface, from the forehead down to the middle of the back, deep neutral gray, and the sides of the neck and throat shaded with the same color. The specimen remains unique, and coming as it does from a region where birds of the usual type are known to occur, it is extremely unlikely that it is anything more than a freak. A careful examination shows that on one wing

the lesser wing-coverts are decidedly gray like the back, while in the other they are greenish like the rest of the wing. Such asymmetrical coloration is so frequent in cases of this character that we feel safe in ascribing it to abnormal development. It is interesting to note that this abnormal development follows the same course as is normal in the far-removed *Pipromorpha rufiventris*.

Specimens examined.—Mexico: Buena Vista, Vera Cruz, 1; Orizaba, 1; Mirador, Vera Cruz, 1; Teapa, Tabasco, 4; Xcopen, Quintana Roo, 1; unspecified, 1. Guatemala: Quirigua, 1; Potrero, 1; Cajabon, Vera Paz, 1; Choctum, Vera Paz, 1; unspecified, 6. British Honduras: Manatee Lagoon, 3; Toledo District, 7; Toledo, 2. Honduras: Julian, 1; unspecified, 1. Nicaragua: Los Sábalos, 1; Greytown, 1. Costa Rica: Guapiles, 3; Cuabre, 2; Rio Sicsola, 1; Carrillo, 4; El Hogar, 1; Peralta, 1; Val, 2; Angostura, 1; Naranjo (Juan Viñas), 1; Pacuarito, 1; Jiménez, 2; Bonilla, 4; Guayabo, 3; Guayabal, 2; Tenorio, 1; La Vijagua, 6; Matina, 1; unspecified, 1. Total, 73.